

Cholesterol Status Among Adults in the United States

Why do we collect serum cholesterol information?

Serum cholesterol is an important risk factor in the identification and treatment of many diseases, especially heart disease, the leading cause of death in the United States. Although persons with levels of serum total cholesterol at or above 240 mg/dl have been identified as having a high risk for heart disease, more recently, analyses of the components of cholesterol—referred to as lipoprotein fractions—have yielded specific information about the role of these components in the prevention or formation of atherosclerotic plaques and subsequent heart disease. In particular, high-density-lipoproteins (HDL-C) may help to protect an individual from developing heart disease, and very low levels of HDL-C indicate that the individual is lacking his or her natural protection against heart disease. A level below 40 mg/dl has been identified as placing a person at increased risk of developing heart disease. Data on levels of these risk factors in the U.S. population help to identify subgroups where risk is greatest and prevention efforts might be targeted. Comparisons over time can also show if the population is experiencing improvement in cholesterol levels.

Serum Cholesterol data from the National Health and Nutrition Examination Survey (NHANES III)

NHANES III (1988–94) measured serum total cholesterol, HDL-C, and other cholesterol components in a representative sample of the civilian noninstitutionalized U.S. population 20 years of age and over. Certain segments of the population, such as nursing home residents and hospital patients, are not surveyed by NHANES. NHANES does over sample for elderly and minority groups, allowing for more precise estimates for these groups.

All cholesterol analyses were based on blood samples taken from persons seen at the NHANES Mobile Examination Center or at home. Serum total cholesterol and HDL-C measures reported here are based upon both fasting and nonfasting samples.

What do NHANES III data indicate about cholesterol levels of the U.S. population?

There are no significant differences in serum total cholesterol levels among the three race/ethnic groups ([figure 1](#)) for either men or women. About 20 percent of U.S. adults had high serum cholesterol levels. Only 13 percent or less of men 20–44 years of age have high serum cholesterol levels compared with more than 20 percent of men in the two older age groups. About 10 percent or less of women 20–44 years of age have high serum cholesterol levels compared with more than 30 percent of women in the two older age groups.

Age did not significantly affect the prevalence of low HDL cholesterol ([figure 2](#)). A higher percentage of men had low HDL-C levels than women. A smaller percentage of non-Hispanic black men had low HDL-C levels compared with non-Hispanic white or Mexican-American men of the same age. About 18 percent of Mexican-American women 20–44 years of age had low HDL-C levels compared with their non-Hispanic white (12%) or non-Hispanic black (11%) counterparts.

Of special concern are persons with high levels of serum total cholesterol who also have low levels of HDL-C because these individuals may be at greater risk of heart disease than others. [Figure 3](#) illustrates that no individual

age, gender, or race/ethnicity group has more than 11 percent of its population with this combination of factors.

Public health importance of NHANES

This information can be used to guide decisions on the distribution of health care treatment resources. Information on chronic disease risk factors can aid in targeting prevention and detection efforts and in evaluating their effectiveness.

Figure 1. Percent with high serum cholesterol levels, by gender, race/ethnicity, and age: United States 1988–94

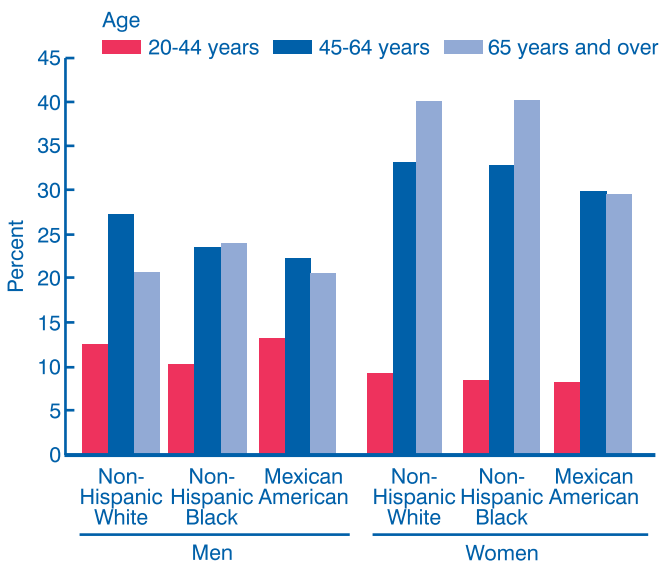


Figure 2. Percent with low HDL cholesterol levels, by gender, race/ethnicity, and age: United States 1988–94

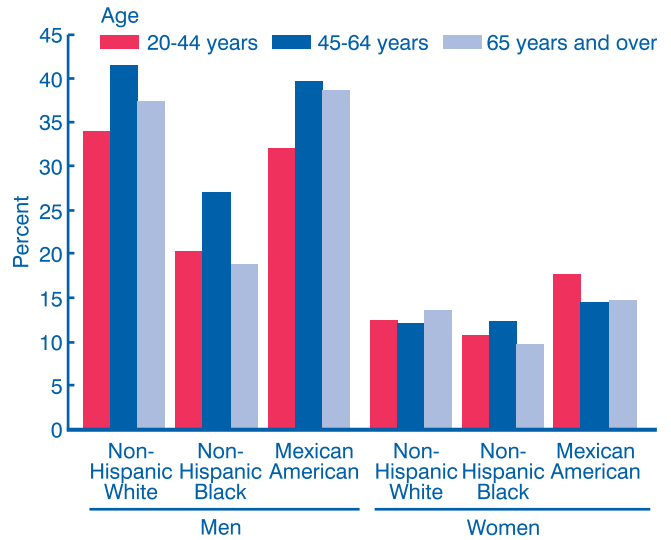
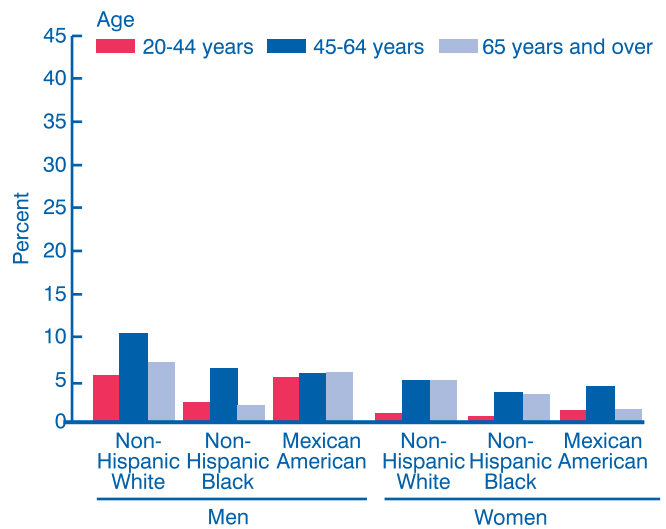


Figure 3. Percent with both high serum cholesterol and low HDL cholesterol, by gender, race/ethnicity, and age: United States 1988–94



For more information about NHANES please visit our Web site: <http://www.cdc.gov/nchs/nhanes.htm>